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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992	)	ET Docket No. 93-7
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	

NOTICE OF INQUIRY

Comments of Scientific-Atlanta

Scientific-Atlanta is a world leader in broadband communications systems, satellite-based communications networks and instrumentation for industrial, telecommunications and government applications.

The company is a recognized worldwide leader in the development and manufacture of cable television equipment used in more than 100 countries and 9,000 local cable sites in the United States, in both analog and digital formats. Scientific-Atlanta is a leading supplier of subscriber systems to cable operators, with over six million addressable and eight million non-addressable cable converters installed throughout the U.S. The company is participating in the EIA-NCTA Committee which is attempting to address the issues in this notice.

The Commission has identified the relatively simple and straightforward goals of the so-called Leahy amendment, which is to ensure that the consumer or cable subscriber can:

-purchase a television receiver or VCR that is sold as "cable ready" or "cable compatible" which in fact meets the appropriate technical requirements;

-watch a program on one channel while simultaneously using a VCR to tape a program on another channel;

-use a VCR to tape two consecutive programs that appear on different channels; and

-use advanced television picture generation and display features.

The Commission asks a number of questions of cable operators and consumer electronics equipment manufacturers that will almost surely confirm what Congress concluded - that a significant portion of the installed base of equipment does not meet these requirements. This problem is further compounded by the fact that the average life of the installed base of cable

equipment is 5-10 years, with some systems having equipment that is somewhat or much older; and that the average life of the installed base of consumer electronics equipment is 7-15 years with some of this equipment also being somewhat or much older. Thus, it may take some time to meet the goals established by this provision.

Given the complexity and diversity of cable systems and consumer electronics equipment and the length of time it takes to replace existing equipment, the FCC should not select a single solution or technology. Each solution should be evaluated individually and adopted by cable operators based on business considerations and the need to best serve consumers.

The current problem is even further complicated by three factors: the 1992 Cable Act, the move towards digital technology, and the advent of and increasing penetration by alternative multichannel video providers.

A number of provisions in the 1992 Cable Act will make achievement of the stated goals of the equipment compatibility section more difficult, including: the tier buy through prohibition, addressability mandate, retiering required by the rate regulation provisions, the added complexity of operating a cable system caused by various miscellaneous provisions in the statute and even certain parts of the equipment compatibility provision itself. In particular, while consumers may be better off, when all things are considered, with addressability, the mandate in the 1992 Cable Act that all systems be addressable within ten years will reduce consumer electronic equipment compatibility. Currently, less than half of all cable subscribers are addressable and faced with the possibility of having the advanced features of their television sets and VCRs disabled. With the 100% addressability mandate, the percentage of subscribers facing the possibility of having these features disabled will more than double over the next decade.

The move toward digital technology in the home will mean that some of the current solutions to the consumer electronics equipment compatibility problem will no longer work and most of the remaining solutions will be much more expensive. In a digital world (including HDTV which the Commission's Advisory Committee has concluded will be digital), all channels are scrambled or encoded, which will make consumer compatibility more difficult.

The increasing availability of and penetration by alternative video programmers and providers will also make consumer compatibility more difficult. The current, proposed DBS systems are all digital and every channel is scrambled or encoded. Every DBS subscriber must have a descrambler in the home and every channel must be viewed through the terminal. Each additional outlet must have a terminal. Thus, consumer compatibility problems will be encountered by all subscribers, while currently only those cable subscribers whose systems are scrambled are faced with this problem.

In the case of MMDS, channels must be received through a box or terminal. Since every channel must pass through the MMDS terminal or box, there are and will continue to be consumer compatibility problems. Of course, for those over-the-air channels that are viewed directly and separately from the MMDS channels, there would not be this set of problems.

In the case of video dialtone, the situation will vary, particularly given that there are a number of options available to telephone companies and the developmental nature of this technology. Those persons with ADSL (the digital technology which is currently being experimented with over twisted-pair copper and which is limited to one or two channels at a time) will more than likely experience consumer compatibility problems.

As the U.S. has found in the HDTV debate, where there is a standard or government mandate, future technologies must be compatible with existing sets, equipment and requirements. This limits the range of options which may be considered when advancing video technology.

Manufacturers may be forced to design around the standard or mandate. Not only could technology be stifled, such a mandate would not take into account the wide diversity of cable systems throughout the United States. It is not in the public interest for the FCC to make rules which require a particular technology or solution.

Scientific-Atlanta would like to address five areas where technology is improving equipment

--Advanced messaging services for easy recall of various pre-selected categories of news, information and other stored messages. Subscribers can create their own electronic newspaper filled with the topics only they have chosen in advance.

--VCR Commander (TM) controller for one-step VCR recording. This allows the 8600X to send "record" and "stop" commands to a VCR so a subscriber will never have to program the VCR again.

--High resolution on-screen graphics which are not limited to characters only, but can support a variety of requirements including cable company logos, video game figures and comparable artwork.

--Near movie on demand (NMOD) capability to compete with videotape rentals through support of more than 100 pay-per-view channels with staged starting times for popular movies. With the accompanying on-screen guide, the subscriber can quickly determine which movies and events are available, receive descriptions and the price of the program at the touch of a button, and then purchase the program. A VCR-like control for NMOD PPV movies permits the subscriber to pause, rewind or jump forward. For example, a consumer could hit the "pause" button in order to answer the phone and return to a movie when the same scene appears minutes later in the next showing of the movie.

--Virtual channels which require no video bandwidth for information services such as sports scores, news, stock prices and weather reports.

--Expanded tuning bandwidth with 550 MHz being standard and 750 MHz and 1 GHz optional.

--Optional audio and video baseband outputs which provide higher quality signals for a growing number of applications.

-Downloadable software to update feature sets. This reduces technical obsolescence by allowing user interface changes such as different language screens; adding, changing or deleting features; and supporting future add-on services for longer terminal life. Updating of the home terminal's software is accomplished addressably without the terminal ever leaving the home.

--Genius (TM) cards for extending current capabilities as well as adding future services, which can be achieved without removing the terminal. Smarter than smart cards and smaller than video game cartridges, Genius cards provide added memory and more processing power. Other application-specific Genius cards will offer everything from video games to home shopping catalogs to spreadsheets to support of future interactive services.

--Renewable security for the most advanced security upgrades through the Genius card feature.

--Dual tune/descramble with two terminals in a master-server arrangement to allow picture-in-picture and the capability to watch and record scrambled channels simultaneously.

--Digital upgradeability which makes the 8600X ready for a future digital video compression decoder.

-X-Port - Serial data port for connection of a printer, PC terminal or other devices for a range of coming interactive services, as well as allowing full operational control of the addressable home terminal by various consumer electronic devices, including televisions and VCRs.

In addition, Scientific-Atlanta is planning to introduce a dual tuner/descrambler converter which will not disable picture-in-picture and other advanced features of television sets and will provide the capability to watch and record scrambled channels simultaneously.

While the 8600X is compatible with new digital compression technology, essentially all converters currently deployed in cable systems are not. The economics of introducing digital video into the home are fragile and any requirement or mandate of consumer compatibility would probably be very costly, possibly delaying or denying the introduction of this technology to the American consumer.

Interdiction

Interdiction is a relatively new technology solution used in cable systems to secure signals.

towns, hospitals and other areas with high turnover, administrative savings are great and penetration rates much higher.

Thus, interdiction, like other technologies being considered, should be evaluated on a case by case basis and implemented by cable operators only where it makes good business sense and is good for the consumer.

Enhanced Remote Controls

Cable equipment manufacturers have introduced learning remote controls which coordinate the features and functions of the TV set, VCR and cable converter. Scientific-Atlanta's new 8600XT remote will include remote control of TV power, TV volume and Mute while supporting all of the features of the Model 8600X Home Communications Terminal.

Advanced Fiber Optic Networks

Scientific-Atlanta and other cable equipment manufacturers, at the urging of cable operators, have introduced advanced fiber optic networks into cable systems. These networks have improved picture quality and greater reliability at reduced costs. In addition, these networks have more channels, require less maintenance and make cable systems ready for new and advanced services.

Security

The primary reason for scrambling a cable signal is to reduce piracy, which by some estimates is equal to one-fifth of cable revenues. While scrambling of the cable signal is the basis of the compatibility problem, it nevertheless provides the most cost-effective, feasible signal control to achieve the Cable Act's goal. There is currently no standard or mandate for either scrambling or addressable compatibility. In deciding whether to establish such a standard or mandate, there would be an initial threshold question of whether to obsolete existing scrambling standards. The Commission has already decided in its deliberations on HDTV that it would be an onerous burden on consumers to obsolete existing sets even when such an important goal as upgrading to the next generation of technology is at stake. If existing scrambling standards are obsoleted, millions of addressable converters and hundreds of millions of dollars in investment in cable plant would be wiped out. If existing scrambling standards were not obsoleted, then consumers with old sets would still need to have descramblers or converters, adding to the complexity of cable systems. There are over 150 million sets in American homes and it would take over a dozen years to replace these sets. Even then, there would be some old sets still in use and cable operators would find it exorbitantly expensive to supply converters for only a few sets. At that point, these old sets could become de facto obsolete. Interestingly, Congress rejected such a standard or similar mandate - one version of the House Energy and Commerce Committee bill contained a provision to have the FCC place addressability in the TV set and set a standard.

Scientific-Atlanta believes that the existing situation of multiple scrambling systems is best for security purposes. With a variety of different systems as is the case at present, it is much more difficult and there is much less incentive to break or pirate from a system. With a standard or mandate, there would be only one security system to break and as a result more incentives to break it. If there is just one way found to break the system, then all devices with that system are open to piracy.

Digital World

The Commission has raised the issue of digital transmission and digital technology and its impact on this proceeding. As Scientific-Atlanta previously noted, the introduction of digital

technology to the home will mean that some of the current solutions will no longer work and most of the remaining solutions will be much more expensive. If the Commission is interested in the issue of interoperability considerations for digital video systems, Scientific-Atlanta refers it to the comments which the company filed in the satellite encryption docket (PPDocket No. 92-234).

In conclusion, a number of marketplace developments are occurring which should improve compatibility between cable systems and consumer electronics equipment even though the current situation is highly complex due to a variety of factors, such as other provisions of the Cable Act, the conversion to digital technology and the increasing penetration by multichannel video providers other than cable operators. Mandating or setting a standard for an interface or technology can only slow down or stifle technology and will do little to change the current situation.

Scientific-Atlanta
One Technology Parkway, South
Norcross, Ga. 30092